
ENVIRONMENTAL Fact Sheet



29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

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Suggested Installation Practices for Drinking Water Treatment Aerators

The goals of this document are to **prevent bacterial contamination** of the treated water and to **maximize radon removal efficiency**.

INTAKE AIR. DES suggests that the air to be used by the aerator be taken from a clean controlled area.

Intake Location. Air intakes for the aerator can be positioned either outside or inside of the home. A reconnaissance should first be made to identify a clean area for locating the air intake. Avoid areas that have moisture, mold, odors or airborne particles, such as dust from woodworking shop.

For **inside the home locations**, DES suggests that the intake be at least a foot above the floor and preferably near the ceiling. If the home is of "air-tight" modern construction, an interior intake location may result in a vacuum being created within the home. This will prevent proper venting of heating system combustion gases unless a fresh air makeup air source is provided.

If the intake is **outside** the home, the intake should be high enough to avoid contaminant discharges from such activities as power lawn mowers, leaf blowers, and splash from roof runoff and garden hoses. The intake also needs to be positioned away from the waste discharge air from the aerator.

Improved Air Quality. An air filter is recommended to ensure clean air. Options include using filters similar to those used on forced hot air heating systems or those used on heavy construction equipment.

Insect / Animal Screen. The intake should include some method to prevent entry of insects and small animals. An air inlet control device can be purchased or an intake can be fabricated by the homeowner. We suggest using a manufactured device. When fabricating your own device, make sure that the inlet opening faces downward and that it is covered with screening. If the intake device is in an active area, further structural protection should be provided. Extra strength could be achieved with the addition of heavy, ½-inch, hardware cloth screening.

Maintenance/ Cleaning.

The air filter should be checked for cleanliness periodically. The frequency is determined by the particle level of the air purity and the frictional resistance of the filter to air flow. Annual air filter replacement is normal.

Friction Loss Measurement

Where there is a long run of air intake piping or where filters have been installed, the level of cleanliness of the air filter and the frictional losses on the suction side of the fan/blower can be determined by providing a capped tee fitting just before the fan or aerator. This tee would have a threaded spigot and a cap of diameter from ¼ to ¾ inches. This fitting would allow precise measurement to be made to identify the frictional resistance in the suction pipe. This measurement would require sensitive pressure gauges typically used in the heating and ventilating field.

DISPOSAL OF WASTE GAS

Waste air from the radon aerator needs to be disposed of outside the home. This air is now moist and has a higher concentration of radon gas.

Vent Location

It is recommended that the waste air discharge point be above the eave of the roof. The State Plumbing Code requires that the domestic wastewater vent stack be at least 12 inches above the roof; radon vent lines are not covered by the Code. Place the radon vent away from windows and on the downwind side of the prevailing wind direction.

Termination of Waste Line

The waste air line should end in a way that prevents the entry of dust, bird droppings, small animals, and other bacterial hazards. This would normally be accomplished by using a manufactured vent cap. For home-made vents, use a 180-degree bend fitting that faces down, covered by ½ inch hardware cloth held in place by a stainless steel screw clamp. Do not use fine screening on this outlet as it will likely develop heavy frost during winter.

Diameter Of Waste Line

The New Hampshire Plumbing Code specifies that the diameter of the **wastewater** vent stack be at least 4 inches. This relatively large diameter compensates for potential ice build up on the interior of the pipe during extremely cold weather. Given the high moisture level of the waste air from a radon aerator, it seems that condensation can occur and thus a 4-inch minimum pipe size is recommended for the waste radon line.

Gravity Damper

In order to reduce the loss of warm air siphoned out of the aerator during non-use, a gravity damper can be used on waste air vent line.

Pipe Drain Slope

Mist will carry over from the aerator into the waste air vent line and condensation may also occur. Both the intake and waste gas line need to be sloped to drain. DES is currently evaluating the proper direction of this slope. The waste air line connections need to be air tight within the home.

For More Information

For more information about radon reduction methods for the **air in your home**, air testing and health information please contact the N.H. Department of Health and Human Services at 271-4674/4764 or review their radon educational documents at www.dhhs.state.nh.us/radhealth.

For more information on radon in **water**, contact the N.H. Department of Environmental Services Water Supply Engineering Bureau, at 271-3139. For a detailed discussion of radon from a geological perspective, please see fact sheet [CO-3](#). For an overall listing of water supply related fact sheets, please request fact sheet WD-WSEB-15-2. Drinking water fact sheets are available

through the DES web site at: <http://www.des.nh.gov/wseb> then select: [fact sheets](#). We would appreciate your comments concerning this fact sheet.